

## APPENDIX J. WILDLANDS AND CONSERVATION LANDS

This appendix identifies and describes the system of wildlands and conservation lands present in the Sacramento and San Joaquin River basins. The type and amount of habitat on National Wildlife Refuges (NWR) and State Wildlife Management Areas (WMA) are summarized in Table 1 for the Sacramento River basin, and in Table 2 for the San Joaquin River basin. Many lands in California are protected through conservation easements. A conservation easement is a legal and financial agreement between a landowner and a land trust. Under the easement, landowners voluntarily restrict the type and amount of development on their property so as to increase ecosystem benefits without giving up ownership of the land. Easements may be permanent or they may be developed to cover a specific period of time. Land owners may sell land covered by easements or they may leave the land to their heirs, but future owners are bound by the terms of the easement. This review of wildlands and conservation lands is not exhaustive since some information is not readily accessible at this time.

### Sacramento River Basin

**Butte Basin.** Butte Basin encompasses approximately 1,000 square miles in the northern Sacramento Valley. Approximately 23 percent of the waterfowl wintering in the Central Valley use the 26,150 acres of wetland habitat in Butte Basin (CVHJV, 1990). During winter 1992-1993, biologists counted nearly 35,000 shorebirds in Butte Basin (Shuford et. al., 1993). The most common shorebirds are dowitchers, least sandpipers, and yellowlegs (Page et. al., 1992).

Private lands provide 67 percent of the wetlands in Butte Basin. Hunting clubs maintain more than 30,000 acres of waterfowl habitat, including about 18,000 acres of natural wetlands and 12,000 acres of flooded rice fields. Most of the privately owned natural wetlands are in the Butte Sink, with 42 hunting clubs managing more than 11,000 acres of natural wetlands (CVHJV, 1990). Conservation easements established by the U.S. Fish and Wildlife Service (FWS) permanently protect 5,350 acres of private wetlands managed by duck clubs (CVHJV, 1990). The Nature Conservancy (TNC) has a 2,300-acre riparian conservation easement on the former Llano Seco Ranch (Forrest, pers. comm.). An additional 1,200 acres of riparian woodland and 5,900 acres of wetlands are protected by conservation easements on other portions of the Llano Seco Ranch, and 500 acres of wetland habitat are protected in the National Audubon Society's Paul L. Wattis Audubon Sanctuary.

Gray Lodge, Upper Butte Basin, and Oroville WMA's are in Butte Basin. Gray Lodge WMA, established in 1931, was the first Sacramento Valley wildlife refuge. The refuge currently maintains 8,100 acres of wetland and upland habitat (Reclamation, 1992). Most of the refuge (approximately 4,870 acres) is managed for moist soil plants to provide waterfowl foraging habitat.

The establishment of the Upper Butte Basin WMA began in 1989 with the acquisition of Shore Ranch and was expanded through acquisition of Llano Seco and Howard Slough. At present, the refuge covers approximately 9,000 acres. Future plans include acquisition of an additional 3,520 acres. The refuge has about 3,300 acres of wetlands, primarily seasonal marsh; 4,000 acres of flooded rice fields; and 1,000 acres of undeveloped rice fields.

Oroville WMA covers 7,000 acres and consists of the former Oroville Dam borrow area and approximately 1,700 acres of adjacent grasslands. Much of the borrow area has become cottonwood riparian forest. The grasslands are located along the northern and eastern sides of Thermalito Afterbay, where the natural shoreline supports emergent marsh habitat. The 5,000-acre Thermalito Afterbay includes 4,300 acres of open water surface.

**TABLE 1  
HABITAT AVAILABLE ON FEDERAL AND STATE WILDLIFE REFUGES  
IN THE SACRAMENTO RIVER BASIN (IN ACRES)**

Refuge	Permanent Wetlands	Semi-Permanent Wetlands	Seasonal Wetlands	Moist Soil Plants	Riparian	Upland	Cereal Grains
Gray Lodge WMA	470	300	-	4,874	800	1,650	-
Upper Butte WMA	-	-	3,000	300	700	-	5,000
Oroville WMA	-	-	-	-	3,600	1,700	-
Yolo Bypass WMA	190	-	2,423	-	34	463	--
Sacramento NWR	4	398	5,611	386	-	3,354	-
Delevan NWR	177	285	3,257	373	-	1,162	-
Colusa NWR	220	2,769	-	142	-	909	-
Sutter NWR	81	-	1,810	93	-	607	-
Modoc NWR	1,400	-	650	2,000	-	1,700	-

**Colusa Basin.** The Colusa Basin encompasses a 1,600-square-mile area west of Butte Basin. The basin stretches from Red Bluff in the north to Cache Creek in the south. The basin is drained by the Colusa Trough, a natural depression that historically collected water and flooded the basin's marshes in winter and spring (CVHJV, 1990). Although flood control projects have eliminated severe flooding, approximately 26,000 acres of natural wetlands remain in or adjacent to the Colusa Trough. These wetlands support 15 percent of the wintering waterfowl population (CVHJV, 1990) and 12 percent of the wintering shorebirds in the Central Valley (Shuford et. al., 1993).

Approximately 5,270 acres of wetlands in the Colusa Basin are on private lands. About 2,585 acres of these lands are in FWS conservation easements (CVHJV, 1990). Additionally, almost 22,000 acres of flooded rice fields are maintained as seasonal waterfowl habitat by hunting clubs (CVHJV, 1990). More than 23,035 acres of land in the Colusa Basin are protected on Federal lands or through Federal conservation easements (CVHJV, 1990). Federal refuges in the Colusa Basin include the Sacramento, Delevan, and Colusa NWR's.

The 10,783-acre Sacramento NWR was created in 1937. The refuge maintains approximately 6,680 acres of wetland habitats, including more than 5,600 acres of seasonally flooded marsh. An additional 750 acres of unflooded wetlands could provide wetland habitat if water were available.

The Delevan NWR, authorized in 1962, currently consists of 5,634 acres of wetland and upland habitats. There are more than 4,000 acres of wetlands on the refuge including approximately 3,260 acres of seasonal wetlands. The refuge has 380 acres of unflooded wetlands that could provide additional wetland habitat if water were available.

The Colusa NWR, established in 1944, consists of 4,040 acres of wetland and upland habitat. The more than 3,100 acres of wetlands on the refuge include approximately 2,700 acres of semi-permanent wetlands.

**American Basin.** The American Basin encompasses 600 square miles and is located east of the Sacramento and Feather rivers and west of the Sierra foothills. Historically, the basin was flooded by waters from the American, Yuba, Feather, Sacramento, and Bear rivers; however, flood management projects have eliminated flooding in the basin (CVHJV, 1990). Approximately 5 percent of the Central Valley's wintering waterfowl population is supported by the basin (CVHJV, 1990). During winter 1992-1993, biologists counted nearly 28,000 shorebirds in the basin (Shuford et. al., 1993).

No publicly owned lands or conservation easements protect waterfowl habitat in the basin (CVHJV, 1990). All of the existing 3,150 acres of wetlands are privately owned. In addition, private hunting clubs manage approximately 8,800 acres of seasonally flooded rice fields (CVHJV, 1990).

**Sutter Basin.** Sutter Basin lies between the Feather and Sacramento rivers and extends from the Sutter Buttes in the north to the confluence of the two rivers in the south. Historically, the 250-square-mile basin contained 40,000 to 50,000 acres of seasonal and permanent wetlands created by the overflow of the Sacramento and Feather rivers (CVHJV, 1990). The basin now has approximately 3,090 acres of wetlands and supports 7 percent of the Central Valley's wintering waterfowl population (CVHJV, 1990). During winter 1992-1993, biologists counted approximately 8,700 shorebirds were counted in Sutter Basin (Shuford et. al., 1993).

Private duck hunting clubs provide approximately 500 acres of waterfowl habitat, of which most acres are natural wetlands. Most of the private waterfowl habitat is located in the Sutter Bypass (CVHJV, 1990). None of the private land is permanently protected through conservation easements. Sutter NWR is the only publicly owned waterfowl habitat in Sutter Basin (CVHJV, 1990).

The Sutter NWR consists of 2,591 acres of wetlands and scattered upland habitat in and adjacent to the Sutter Bypass (Reclamation, 1992). More than half the refuge (1,810 acres) is managed as seasonal wetlands.

**Yolo Basin.** The Yolo Basin occupies 400 square miles just north of the Delta. Historically, the basin received overflow from the Sacramento and American rivers and from Putah Creek, Willow Slough, and Cache Creek. Marshes in the southern portion of the basin adjacent to the Delta were permanent wetlands, while more northerly areas were largely comprised of seasonal wetlands resulting from winter and spring floods (CVHJV, 1990). A new 3,500-acre WMA has been established within the Yolo Bypass and is managed by California Department of Fish and Game (DFG). This refuge consists of about 2,423 acres of seasonal wetlands, 190 acres of permanent wetlands, 463 acres of grasslands, 34 acres of riparian forest/woodland, and 390 acres of irrigation channels, conveyance structures, roads, and parking areas. Another new habitat area is managed by the City of Davis and is associated with their wastewater treatment facility. This area consists of 220 acres of permanent wetlands, 44 acres of seasonal wetlands, 26 acres of riparian forest/woodland, and 106 acres of grasslands.

Approximately 8,700 acres of natural wetlands in the Yolo Basin are privately owned. Private duck clubs maintain approximately 25,800 acres of additional waterfowl habitat as flooded and unflooded fields. As of 1992, none of the private wetlands were protected through conservation easements. (CVHJV, 1990.)

### **San Joaquin River Basin**

**Kesterson National Wildlife Refuge.** The Kesterson NWR encompasses 5,900 acres of land in the Grassland Resource Conservation District (GRCD) (Reclamation, 1992). The refuge was established by FWS in 1970, and was enlarged with the acquisition of the Freitas unit. The refuge is managed for upland habitat.

**San Luis National Wildlife Refuge.** The San Luis NWR covers 7,340 acres in the GRCD. The refuge is a complex of wetland, upland, and riparian habitat, with approximately 2,700 acres of wetlands managed for moist soil plant production. Of the 3,940 acres of grasslands, 145 acres of native grassland are preserved as a rare ecological community.

**Merced National Wildlife Refuge.** The Merced NWR was established in 1951 to alleviate crop depredation and provide waterfowl habitat. The 2,562-acre refuge is one of the most important wintering areas in California, supporting up to 30,000 snow and Ross' geese and up to 10,000 lesser sandhill cranes (Reclamation, 1992). The refuge maintains approximately 1,232 acres of wetlands, of which about 730 acres are in moist soil plant management. A total of 550 acres are in cereal grain production, primarily alfalfa, and corn.

**TABLE 2  
HABITAT AVAILABLE ON FEDERAL AND STATE WILDLIFE REFUGES  
IN THE SAN JOAQUIN RIVER BASIN (IN ACRES)**

Refuge	Wetlands	Moist Soil Plants	Riparian	Uplands	Agriculture
Kesterson NWR	-	-	-	5,900	-
San Luis NWR	-	2,690	200	3,940	-
Merced NWR	503	729	54	660	550
North Grasslands WMA	162	1,107	614	2,011	1,662
Los Banos WMA	774	2,400	75	1,903	430
Volta WMA	177	285	3,257	373	-

**Los Banos Wildlife Management Area.** The Los Banos WMA, created in 1929, was the first waterfowl refuge established in California (Reclamation, 1992). The refuge covers about 5,586 acres of the San Joaquin River floodplain. It maintains approximately 3,200 acres of seasonal and permanent wetlands, and 213 acres of alkali sink habitat.

**Volta Wildlife Management Area.** The Volta WMA is leased from U.S. Bureau of Reclamation and managed by DFG. The 3,000-acre refuge is in the GRCD. The refuge maintains more than 1,800 acres of Wetlands, including 1,400 acres of moist soil plants, and 720 acres of alkali sink habitat are preserved on the refuge as a rare ecological community. The Volta WMA provides habitat for a variety of bird species.

**East Gallo Unit.** The East Gallo Unit encompasses approximately 4,000 acres and is managed by the FWS as part of the San Luis NWR. The unit provides 300 acres of seasonal wetlands and 100 acres of permanent Wetlands (Reclamation, 1992). Additional habitat includes natural grasslands, vernal pools, riparian floodplain, and irrigated pastures. Lands were purchased by the FWS and TNC (which in turn sold its lands to the FWS).

**West Gallo Unit.** The West Gallo Unit encompasses 3,892 acres adjacent to, and north of, the San Luis NWR. The San Joaquin River forms the eastern border of the unit. The unit was purchased by the FWS in 1993 and is managed as part of the San Luis NWR. Although it continues to receive heavy grazing pressure, the southern portion of the West Gallo Unit retains its natural topography. Several flooded swales and other wetlands are contiguous with the San Luis NWR and provide wetland habitat values. The West Gallo Unit has 364 acres of seasonal marsh and vernal pools and 14 miles of riparian habitat along the San Joaquin River and Salt Slough.

**North Grasslands Wildlife Management Area.** The North Grasslands WMA was purchased by the State of California in April 1990 and is managed by DFG. The management area consists of two units: China Island and Salt Slough. The two units contain 5,556 acres comprised primarily of agricultural land and pasture. However, extensive river and slough channels with riparian edge are also present (U.S. Department of the Interior and DFG, 1993). Salt Slough does not have a firm historical water supply (U.S. Department of the Interior and DFG, 1993). Never-the-less, DFG developed approximately 300 acres of new seasonal wetlands at Salt Slough recently for waterfowl habitat management. North Grasslands WMA provides habitat for a variety of wildlife species.